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ANNUAL MEETING OF THE ENTOMOLOGICAL SOCIETY OF ONTARIO.

The annual meeting of the Society was held at London, in the Society's Rooms, Victoria Hall, on Wednesday, October 3rd, 1883, at 7:30 o'clock p. m.

The President, Mr. William Saunders, of London, Ont., in the chair.

Present—Rev. C. J. S. Bethune, M. A., Port Hope; Rev. T. W. Fyles, Levis, P. Q.; James Fletcher, Ottawa; R. A. Hanham, Paris; W. H. Harrington, Ottawa; J. M. Denton, London; B. Gott, Arkona; A. Puddicombe, London; F. C. Lowe, Dunnville; H. P. Bock, London; W. E. Saunders, London; J. Magnus Johnston, London; the Sec.-Treas., E. Baynes Reed, and others.

The minutes of the previous meeting were confirmed, the reading being dispensed with, as they had already been printed and sent to the members.

The President addressed a few words of welcome to the members, expressing the pleasure which the London brethren felt at meeting their fellow workers from the various parts of the Province.

The report of the Council and the financial statement of the Sec'y-Treasurer for the past year were then read, and on motion duly received, discussed and adopted.

The report of the Montreal Branch was next submitted and adopted.

The President then read his annual address, for which he was unanimously awarded a vote of thanks, and requested to publish it in the CANADIAN ENTOMOLOGIST.

Mr. James Fletcher, of Ottawa, then presented the report of the Entomological Society of Ontario to the Royal Society of Canada, which was received and adopted, after which Mr. Fletcher was unanimously re-elected the representative from the Entomological Society to the Royal Society for the coming year.

ELECTION OF OFFICERS.

The election of officers then took place, when the following gentlemen were duly elected :—

President, Wm. Saunders, London.

Vice-President, James Fletcher, Ottawa.

Secretary-Treasurer and Librarian, E. Baynes Reed, London.

Council—Rev. C. J. S. Bethune, M. A., Port Hope; Rev. T. W. Fyles, Levis, P. Q.; W. H. Harrington, Ottawa; John M. Denton, London; J. Alston Moffat, Hamilton.

Editor CANADIAN ENTOMOLOGIST, Wm. Saunders.

Editing Committee—Rev. C. J. S. Bethune, J. M. Denton, E. Baynes Reed.

Auditors—H. P. Bock and W. E. Saunders, London.

REVISION OF THE SOCIETY'S PRINTED LISTS OF INSECTS.

On the motion of Rev. C. J. S. Bethune, duly carried, it was resolved that the Society should, as soon as possible, publish a Revised List of the Canadian Diurnals, adopting as a basis the list and classification of Mr. W. H. Edwards, of West Virginia; and that the Society should also publish additional lists of such moths as have been found to be Canadian, and are not contained in the Society's existing lists.

In view of the desirability of the publication of the descriptions of hitherto undescribed larvæ, and with a view to aid therein, the President, Vice-President, Rev. C. J. S. Bethune and W. H. Harrington were appointed a committee to prepare blank forms for the use of members in describing larvæ: the Society being of the opinion that following the practice of Westwood and Stainton, the body should be considered as consisting of thirteen segments, the head being the first.

The Rev. T. W. Fyles then read an interesting paper on "Observations on Form and Color as Exhibited in Insect Life."

A. A. A. S.

The President submitted a report of the proceedings of the Entomological Club of the American Association for the Advancement of Science, held at Minneapolis in August last, which he attended as the representative of the Entomological Society of Ontario.

DISCUSSION ON MISCELLANEOUS ENTOMOLOGICAL SUBJECTS.

Mr. Fletcher exhibited a borer found by him injuring maple, the insect being a small moth belonging to *Hepialus*, or some closely allied genus. This insect was new to the members.

Rev. Mr. Bethune stated that he had found, in a large burrow in an oak tree, the empty pupa case of a species of *Cossus*.

Mr. Harrington had also found this insect quite common in the oak, and had frequently seen the empty pupa cases protruding from the bark.

Mr. Fletcher reported that he had found *Cossus centerensis* common about Ottawa on the Balm of Gilead tree, *Populus balsamifera*. The pupa is usually extruded from the bark about 4 o'clock in the afternoon. He had frequently seen them at this time of day working gradually out. The imago generally escapes within an hour after the appearance of the pupa. He also reported finding *Buprestis fasciata* common on poplars, and had found a larva in poplar wood which he thought, from its appearance, might belong to that species.

Mr. Harrington said he had lately found the larva of a very small fly, *Cecidomyia robiniæ*, on locust trees about Ottawa. These larvæ turn down the margins of the leaves, and live within the enclosure thus formed.

Mr. Fletcher had found the stems of sunflowers much bored into by some insect, and exhibited a larva which he had taken boring into the stem of a lily, *Lilium Canadense*.

Mr. Reed exhibited a larva which he had taken recently feeding on oak. It evidently was a species of *Smerinthus*, but did not seem to correspond to any hitherto described larva of this genus to which he had been able to refer.

Mr. Saunders made some reference to the manner in which the eggs of the round-headed apple-tree borer, *Saperda candida*, are placed. He had, until lately, held the opinion, in common with other Entomologists, that the eggs are laid on the surface of the bark of apple trees near their base, but he had recently received from a correspondent, Mr. C. G. Atkins, of Manchester, Maine, specimens of the eggs deposited in young apple trees, with pieces of the bark in which they had been placed, from which it was quite evident that the beetle bores into the bark and deposits her eggs in the channel thus formed.

Mr. Fletcher said he had raised a brood of the larvæ of *Smerinthus exæcatus*, and found them to feed readily on *Populus balsamifera*, and also

on *Populus alba*, the latter known as the Silver Abele tree; the larvæ varied very much in coloration. Hitherto this insect has been supposed to feed only on apple, plum, and wild cherry.

Mr. Saunders stated that he had found the larvæ of *Papilio turnus* this season on a new food plant, *Magnolia accuminata*. As many as forty or fifty specimens were found on a single tree; they varied in size from the newly hatched to the full grown larva, all feeding together; eggs were also found at the same time and place.

Mr. Fletcher reported finding the larva of *Darapsa versicolor* feeding on swamp loosestrife, *Nesæa verticillata*. He had bred a single specimen two years in succession. It is curious to note that this plant grows in the water, and being herbaceous, decays and becomes submerged during the autumn and winter months. In these instances there was no favorable pupating place nearer than the shore, so that the larva would have to swim ashore, unless it formed its cocoon among the leaves and these drifted to land.

Mr. Reed exhibited and reported the larvæ of *Notodonta albifrons*, Sm. and Abb., as common in London on the maple; he had also observed them recently on the elms in Toronto and Montreal. Other members had found them generally common this season on the oak.

Mr. Saunders had found the larvæ of *Papilio cresphontes* on the wafer ash, *Ptelea trifoliata*; also on the prickly ash, *Zanthoxylum Americanum*. At this late period of the year (September) the larvæ may be found quite small. Query.—Do these perish from early frost? If not, how do they pass the winter?

The meeting then adjourned, to meet next morning at 9.30 a. m.

Thursday Morning, October 4.

The meeting opened at the Society's rooms at 9.30.

The question of the use of Paris green for the codling worm of the apple, *Carpocapsa pomonella*, was discussed, and while the members concurred in the desirability of testing this remedy very fully, they recommended that due caution should be used in preparing the mixture, not to make it too strong, one teaspoonful of the poison to a pailful of water being sufficient; if used much stronger than this it is apt to injure the foliage.

An interesting communication was read from Mr. J. Alston Moffat, of Hamilton, on the pupa of *Calopteron reticulatum*. He has found speci-

mens under the bark of an elm stump, curiously arranged in regular rows; Mr. Harrington had also observed the same species, and remarked that Drs. Leconte and Horn, in their new Classification of Coleoptera, referred to these curious groups of pupæ.

Mr. Fletcher had found *Mamestra picta* very abundant at Ottawa on cabbage, carrots, and many wild plants.

Mr. Harrington remarked that *Lycomorpha pholus* had been very common in the vicinity of Ottawa this season; he had seen hundreds of them; had also found *Œdipoda corallina*, Harris, quite common in oat fields.

Rev. Mr. Fyles reported the currant worm, *Nematus ventricosus*, as being very abundant at Levis, P. Q., where the bushes had been almost destroyed by them. He also stated that much injury had been caused to the tamarack trees, *Larix Americana*, in Bury and the neighboring townships, by a species of Saw fly, probably *Nematus Erichsonii*, the insect which has caused so much injury to this tree in Maine and other Eastern States.

Mr. Harrington informed the members he had found *Xyphidria albicornis* boring on maples, chiefly on young trees where the bark was thin. He had observed them ovipositing from the middle of June to the end of July. The ovipositor is short. He found in one instance a tree thoroughly riddled by the borers, they having penetrated directly into the wood.

The members having spent some time in examining interesting insects in the Society's collection, as well as those brought to the meeting; and also having availed themselves of the opportunity of reference to many of the valuable books in the Society's library, brought to a close a most interesting and profitable session.

ON THE VARIATION OF THE ELYTRAL MARKINGS IN CICINDELA SEX-GUTTATA.

BY C. H. T. TOWNSEND, CONSTANTINE, MICH.

In this species of the genus *Cicindela* there are several very marked varieties, differing in the number, size and manner of disposing of the markings on the elytra; while other less marked, yet distinct forms, com-

ing between the more marked ones, constantly occur. Being struck with the considerable differences between the specimens I have collected of this species, it occurred to me that my observations on the subject might be of interest to some others; and with that view I give them. In speaking of the spots the following nomenclature will be adopted in this article :—

1—Anterior; 2—intermediate; 3—posterior; 4—fourth; 5—basal; 6—antero-basal.

In reference to those of either elytron, they may be further designated as right or left.

The typical variety (1) is, of course, the one having three of the beautiful creamy dots on the outer margin toward the end of each elytron; or, the anterior, intermediate, and posterior spots. Where not otherwise stated, all the varieties will be understood to have these three typical spots. Others (2) have the rudiment of a fourth spot, which I have so called, near the inside margin; being what is in *vulgaris* the prolongation inward of the anterior spot in *sex-guttata*. A variety (3) just in advance of this is one having the fourth spot as well developed as the others. The one (4) next in order has the anterior spot connected with the fourth by an almost imperceptible thread; but with no extra markings on the elytra.

We come now to the forms in which the extra markings, not so frequently met with, occur. The first of these forms (5), in addition to the fourth spot, has the rudiment of the antero-basal. The next (6) has, beside the fourth, instead of the rudimentary antero-basal, the rudiment of the basal spot. The other (7) is an amalgamation of the two, having, as well as the fourth spot, the rudiments of not only the basal, but also the antero-basal, thus being really twelve-spotted—twice the number indicated by its name! Then the final (8), and one departing most widely from the typical variety, is distinguished by having the anterior and fourth spots united by a wide line into one, as in *vulgaris*, forming the irregular, band-like marking, and of nearly the same pattern, with which that species is ornamented. And further it is distinguished by having also the basal and the antero-basal spots well developed, but not connected; these corresponding to the curved band of *vulgaris*, in the same position. Although the markings are here much more developed than in the preceding, still,

on account of the connection of the anterior and fourth spots, resulting from this very development, the present variety can only be said to have ten spots instead of twelve. Another variety of which, not having met with it, I have not before spoken, is recorded by Mr. W. H. Harrington in a previous number of this periodical (CAN. ENT. xiv., 8). It is one "having only two spots (the anterior one on each elytron)." This must certainly be an interesting and widely deviating form.

As might be supposed, there are many gradations between these varieties, undoubtedly the result of promiscuous unions. In some the fourth spot, in others the connecting line, and in others still the basal and antero-basal spots are so decidedly defective that the varieties can not be determined by merely observing the outside of the elytra. In all such cases the difficulty can be easily overcome by opening the elytra and holding the insect up to the light, the under side toward you, when it will instantly be apparent what parts are not green on the outside, and the merest marking of a lighter color be detected with certainty. The two elytra are almost always alike in this respect, though sometimes one will have a faint, broken trace of a thread, while the other has none. We may notice that the spots in *sex-guttata* are arranged after nearly the same pattern as in *vulgaris;* and that where in the latter a marking becomes slight and very narrowed, it is often entirely erased in the former, the tendency of the markings in *sex-guttata* being to become more rounded and not lengthened out. Thus the curved marking at the extremity of the elytron in *vulgaris* becomes two in this species, as is likewise the case with the curved basal marking.

The appended table shows the relative number of individuals of each variety out of 49 specimens taken this summer. It will be noticed that the greater number belong to the second variety, the one with the rudimental fourth spot. Of the eighth variety I have met with none this year, but have taken several within a few years past. As the season is too far advanced now for taking the species, further observations on this interesting relation in number between the varieties must be deferred until next summer. Were it not for this, I should have endeavored to make these observations more exact by examining a much larger number of specimens before publishing the present article. However, this may serve the purpose of a foundation for further investigations on the subject.

TABLE SHOWING THE RELATIVE OCCURRENCE OF THE VARIETIES OF C. SEX-GUTTATA.

Date of Capture.	No. Taken.	No. of 1st var. Proper.	No. of 2nd var. Rudiment of Fourth Spot.	No. of 3rd var. Well Developed Fourth	No. of 4th var. Fourth and Anterior connected.	No. of 5th var. Rudiment of Antero-basal	No. of 6th var. Rudiment of Basal.	No. of 7th var. Rudiments of both.	No. of 8th var. Markings full.
July 11	19	2	11	2	1		2	1	
July 13	26	4	11	3	1	1	4	2	
August 6	3		1				2		
August 23	1						1		
Summary.	49	6	23	5	2	1	9	3	

AN EXTRAORDINARY HABITATION FOR A MOTH.

BY FREDERICK CLARKSON, NEW YORK CITY.

Among a number of cocoons of the family of Bombycidæ collected on Long Island this autumn, I have one of *P. cecropia* of light weight. As the examination of this cocoon revealed conditions unknown to me, I have thought it desirable to make a record for your invaluable journal. The absence of the loose silk of a reddish hue which characterizes the appearance of the new made cocoon, indicated that it was a manufacture of the previous year. On opening it I found within a cocoon of *O. macrurum*, the parasite that commonly attacks the Polyphemus caterpillar. The parasite had emerged from its cocoon, as evidenced by the usual lid opening at one end, and had escaped into the outer air through the open passage that exists in the cocoon of the moth. Within the cocoon of the parasite I found a silken cocoon occupying the entire area and protruding somewhat through the opening made by the former occupant. Within it were the unrecognizable remains of a Lepidopterous larva, largely consumed by what I believe to be the parasitic Diptera of the genus Tachina.

DESCRIPTIONS OF NEW SPECIES OF NORTH AMERICAN BUTTERFLIES.

BY W. H. EDWARDS, COALBURGH, W. VA.

ARGYNNIS LAIS.

Male.—Expands 2 inches.

Upper side uniform bright red fulvous, slightly brown about bases of wings; the black markings all delicate; both wings bordered by a double line.

Under side of primaries pale cinnamon-red, buff in upper outer part of cell and from costa to first median nervule; a brown patch at apex and another before apex, on which are two silver spots; the upper submarginal spots silvered. Secondaries have the area from base to outside second row of spots yellow, mottled with dark brown; the belt beyond same spots clear yellow, the margin dark brown; all the spots well silvered, rather small, those of the discal and second rows slightly edged on upper side by black.

Female.—Expands 2.2 inch.

Upper side dull fulvous, the bases much obscured; the hind margins bordered by heavy lines, which are confluent on apical half of primaries; all the markings heavier than in the male. Under side of primaries cinnamon-red, the apical area yellow-buff, quite to hind margin, to the exclusion of the brown patches; the silver spots reduced. Secondaries yellow-buff less mottled brown, the marginal border nearly same buff, very little obscured; the spots of both rows bordering on the belt without dark edging, so the belt is unusually wide.

From several examples, male and female, taken at Red Deer River, by Captain Gamble Geddes.

This species is size of *Atlantis* and would stand between that and *Aphrodite*.

MELITÆA CHARA.

Male.—Expands 1.15 inch.

Shape of *M. Perse*, and belongs to same group. Upper side yellow-fulvous, reticulated with black, as in *Perse;* the hind margins and apical area of primaries black; the fulvous extra-discal band on same wing yellow-white next costal margin; fringes black, white at the tips of the nervules, of secondaries with a few black hairs only at the tips of the nervules.

Under side of primaries shows the black markings repeated; costal edge white; along hind margin a narrow dull orange belt, before which is a series of white crescents; secondaries have the marginal belt dull black, next the white crescents, then a series of dull orange quadrangular spots on black ground; across the disk a white band cut by a black line a little within its posterior edge; beyond, orange heavily edged with black; a white spot in cell on median nervure; a white band across the wing near base; at base orange, the shoulder white.

Female.—Expands 1.4 inch.

Less black than the male, the fulvous more red; under side as in the male.

This species may be distinguished from *Perse* by the color and markings of outer half of secondaries beneath; *Perse* has the margin buff or orange-ochraceous, the second row of spots rounded or crescent. Taken by Mr. Morrison in South Arizona and said to be common.

CHRYSOPHANUS FLORUS.

Male.—Expands 1.3 inch.

Upper side brown with a purple reflection; the hind margins broadly bordered black, especially on secondaries, the border almost reaching the discal row of spots; this row is common to both wings, zigzag; a bar on the arc of each cell; primaries have two spots in cell and one below; secondaries have a spot in cell, concealed by the long hairs which cover the basal area; at anal angle a small fulvous patch; fringes cinereous.

Under side of primaries yellow-brown, the apex light brown; the black spots repeated, enlarged, and in addition, an imperfect row corresponding in position to the inner edge of the black border of upper side. Secondaries light brown, the spots repeated in dots and minute marks; a submarginal series of red serrations from inner angle to middle of wing.

Female.—Expands 1.35 inch.

Upper side dark brown, a little mottled with obscure yellow on disk of primaries at end of cell, and outside the black spots in median interspaces only; the fulvous anal patch as in male, and an indistinct fulvous crescent in the next interspace. Under side as in male.

This species in male resembles *Helloides* ♂, but the latter has much fulvous on hind margin of secondaries, and to both margins a narrow black border, whereas in *Florus* the borders are remarkably wide. The

female on upper side resembles not *Helloides*, but ♀ *Sirius*. But on under side both sexes in color and markings are near *Helloides*.

Taken on Red Deer River, B. Am., by Captain Geddes.

LYCAENA AFRA.

Male.—Expands .9 inch.

Upper side deep blue, the hind margins with fuscous borders, which on primaries are very broad; on each wing a black discal streak; fringes cinereous.

Under side drab; a common mesial row of minute rounded black spots, each edged white; on secondaries a spot on costa near base; the discal streaks repeated, slight, with white edging.

This species was taken by Captain Geddes in the Deer River country. It belongs to the *Antiacis* group, and is the smallest member of it. Has wide black borders *and a discal mark* on each wing, on upper side, which is not found in other members of this group. The arrangement of the spots as in *Lygdamus*.

EUDAMUS DRUSIUS.

Male.—Expands 1.7 inch.

Upper side glossy dark brown, with eight minute semi-transparent spots on primaries; four of them sub-apical on costal margin, three in discoidal and median interspaces, one at right angles to the lowest of the three, in submedian interspace towards hind margin, one in cell; fringes of primaries fuscous, at inner angle cinereous; of secondaries white, cinereous at outer angle.

Under side dark brown, the hind margins lightly dusted with whitish scales; the spots on primaries repeated, a little enlarged; secondaries crossed by two obscure bands, with black outlines. Body above dark brown, beneath dark gray-brown; legs gray brown; palpi either dark gray, or with so many brown hairs as to nearly conceal the whitish ones; antennæ black above, beneath finely annulated with luteous; club black above, luteous below.

Female.—Expands 1.7 inch. Similar to the male.

This species is near *Moschus* Edw. Has the spots fewer in number, smaller, and differently disposed; beneath is darker, and the bands on secondaries are indistinct; abdomen below without ventral line; legs and palpi different color, the latter in *Moschus* yellowish.

Taken in So. Arizona, by Mr. Morrison in 1883.

ENTOMOLOGY FOR BEGINNERS.

TRIALS OF INSECTS.

BY R. V. ROGERS., KINGSTON, ONT.

We do not intend in this article to allude to the troubles that the members of the insect world endure in their ordinary every day life,—to their difficulties in getting out of their old clothes when nature bids them change their dress; nor to the risks they run from countless enemies, many-legged, four-legged, two-legged and no-legged,—nor yet to the labors some have to sustain in laying up their bread for a rainy season. Nor is our title intended as the text on which to found a disquisition on the sufferings that the *genus homo* has had to endure (not at the hands, but at the mouths and tails of the insect hosts) ever since that sad day when old Noah, at the advice of Archangel Gabriel (who ought to have known better) broke his word to the serpent. All of course know the legend, yet as Lord Macaulay often did for his erudite school-boy, so will we do, and repeat and give the story of the origin of all venomous anthropophagus insects. We have it from the veracious Turk, so none but a Russophile or an anti-Jingoist will doubt it, and entomologists know neither country nor politics (whatever else they may know).

Ages agone, when the righteous Noah was safely floating over the troubled waters of the angry flood in his "allotted ocean-tent," the ark drifting before the gale struck a rock and sprang a leak. In vain Noah toiled to repair the damage done and thus avoid what seemed to be the fate of all of Adam's line. At last, the old Serpent, who after having caused the destruction of the world had carefully ensconced himself in the ark, came to him and promised to help him out of his mishap if he would undertake to supply him with human flesh for his daily food when the waters should abate. The patriarch, urged by dire necessity and fear, made the promise, and the Serpent coiling himself up in the hole stopped the leak. When at length the ark rested on dry land once again and all were going out of the dark ship into the pleasant sunshine, the snake, wearied and worn, crawled out of the hole and demanded a fulfilment of the promise. The antediluvian, however, following Gabriel's advice, refused to fulfil his pledge, and seizing his benefactor, burnt him in the flames on his altar and scattered his ashes to the winds. But heaven, unwilling that the Serpent should thus be deprived of his promised

reward, immediately caused to arise from these ashes flies, fleas, lice, bugs and all such vermin as feed upon the flesh of living man.

Our article, however, is to be a legal one, and the trials to which we will allude herein will be only those in which insects have figured as principals in courts of justice. Some may imagine that the well known maxim of law, "De minimis non curat lex," would exclude these small fry from Dame Justice's consideration; but judges and jurisconsults have, in days gone by, paid considerable attention to the insects when their actions have been particularly obnoxious to humanity.

The delvers into antiquarian lore have brought to light nearly one hundred instances in which noxious animals were arraigned and tried for their misdeeds. The records extend from A. D. 1120 to A. D. 1741, beginning with caterpillars and ending with a cow. Some counsel learned in the law was always assigned to defend the accused. When in the Swiss diocese of Constance, grubs and Spanish flies were cited before a magistrate, he (as Felix Hemmerlin, of Zurich, tells us), taking into consideration their youth and diminutive size, appointed an advocate to defend them.

In 1545 a species of beetle infested the vineyards of St. Julien, near St. Julien de Maurienne; legal proceedings were begun against them. A lawyer appeared on behalf of the inhabitants, and another was appointed to answer for and defend the little coleopterans. But, as is often the way with criminals, these defendants were not ready for their trial, and so, having not been bound over to appear, they all suddenly left the country; all proceedings consequently dropped. In 1557 the beetles re-appeared, and did much damage. Again the aid of justice was invoked, her arm uplifted, and the wheels of the law set in motion. Domestic animals, when they sinned against man, were tried in the ordinary criminal courts, and their punishment, on conviction, was death; but wild animals who offended seem to have been within the special jurisdiction of Mother Church and tried in the ecclesiastical courts, the thunderbolt of the anathema being the judgment usually used against these dumb creatures. Said the learned canonists, "As God cursed the serpent, David the mountains of Gilboa, and our Saviour the barren fig-tree, so, in like manner, the Church has full power to exorcise, anathematise and excommunicate all creatures, animate and inanimate." Well, in this case, the Vicar-General of the Diocese appointed a judge to try the beetles and named a lawyer to defend them; for it was held that they should be treated with the

greatest clemency that justice would allow, the lower animals being the elder-born and first heirs of the earth and blessed of God, who gave them every green herb for meat. Judge and counsel being named legal discussions followed, and at last it was decided that the inhabitants should provide a piece of land outside the vineyards of the parish for the beetles, sufficient in quantity and quality for their use. This was done ; a fortnight later the counsel for the prosecution moved the Court for an order, that in default of the accused accepting the land offered they should be prevented meddling with the vineyards, under certain penalties. The advocate for the coleopterans asked time to consider, and the case coming on again after two months, he declared that he could not, on behalf of his clients, accept the land offered, as it was barren and produced nothing suitable for their food and sustenance. Issue was joined on this point, and arbitrators appointed, and then ——. Here, unfortunately, the report stops, and we know not what was the result. We are not informed who paid for the defence of these beetles, but we are told that such legal processes could never be begun until all arrears of tithes were paid to the Church.

In 1690 legal proceedings were taken against some caterpillars, who, in the way of business, were laying waste the cultivated parts of the little town of Pont-du-Chateau, in Auvergne. The Vicar excommunicated them and the Judge of the district laid an interdict upon them, and solemnly relegated them to an uncultivated spot which was duly designated.

A lawyer of France, in writing on the important subject of trials of animals, speaks (with that accuracy and truthfulness for which the members of that profession are noted) of locusts, in India, no less than three feet long, with legs armed with teeth so powerful that saws were made of them.

In 1120 some other naughty caterpillars were tried at Laon ; the next year flies came before the Court at Forgny. In the fourteenth century Spanish flies were tried at Mayence ; and in 1479 cockchafers at Lausanne. By the way, the ecclesiastial court was rather sharp on these poor chafers. After three religious processions had gone the rounds, the insects were cited to appear in the Bishop's court ; for counsel they had assigned to them one Perrodet, who had been dead six months. In consequence of his absence in the Spirit-world, the advocate did not appear in court when the case was called on, and as the chafers did not appear personally, judgment was given against them by default. They were excommunicated in the name of the Holy Trinity and the Blessed Virgin, and they and

their descendants were ordered to quit forever the Diocese of Lausanne.

We presume that in this case some of the chafers were brought into Court to hear the sentence. That step was taken some years previously in the same town, when judgment was given on non-appearance against some leeches, and a number of them were brougbt into court to hear the sentence that they were to leave the district in three days. By the way, the leeches proved contumaceous and did not leave, whereupon they were exorcised; that process had the effect of a capital punishment, for they at once began to die off, and so went on day by day until they were utterly exterminated.

Weevils were prosecuted at Beaume in 1488, at Macon in 1501, at Cotentin in 1504, and at Troyes in 1576; these poor coleopterous long-noses seem to have been especially obnoxious to the Church. Caterpillars were tried at Cotentin in 1585, and at Auvergne in 1690. Locusts were frequently sat upon by the Judges. And as late as the eighteenth century ants were proceeded against in Brazil. These little black busybodies had so undermined a monastery of St. Anthony that it was in danger of falling about the ears of the monks; they also worked so indefatigably by night and by day at stealing the grain of the friars, that these holy men were like to starve. The lawyer for the insects on this occasion was no dweller in the Spirit-world, but a shrewd and learned servant of Justice. He argued that as his clients had received from the Creator the gift of life they had a right to preserve it as best they could; that they set an example to men in the practice of many virtues; prudence, in storing food for future use; diligence, in gathering corn (and here he quoted St. Jerome); charity, in aiding one another with heavy burdens; and religion and piety, in burying their dead. While admitting that the friars were more noble and more worthy, this bold advocate alleged that before God they were only like ants; that the advantage of reason scarcely compensated for their sin in breaking the laws of nature and of reason; that their crime in offending against God was greater than the ants' in taking their flour. That the ants had prior possession, and that if expelled they would appeal to the tribunal of their Divine Creator, who made the smallest as well as the greatest and had assigned to every one his guardian angel; and in conclusion, he asserted that the defendants would continue their mode of being, as the earth and all it contained belonged to God, and not to the monks. After a careful perusal of the evidence and consideration of the arguments, the Judge ordered the monks to select a field in the neighbor-

hood where the ants might live peaceably, and that they should remove thither at once under pain of excommunication. The sentence was read in a loud voice at the mouth of the ant-hills, when, *mirabile dictu*, immediately millions of ants came out, forming themselves into long and dense columns, and proceeded at once to the field assigned them abandoning their former dwellings. So saith the Rev. Father Manœl Bernardes, in his "Nova Floresta;" and he saw the records of the pleadings and proceedings himself.

The tribunals were generally very loath to proceed to extremities and exorcise these little sinners. This was due partly to the milk of human kindness that flowed beneath the towered heads of the priestly judges; and partly because it was noticed that, upon some occasions, after having been anathematised, the noxious animals, instead of "withering off the face of the earth" (as they were expected to do and ought to have done), actually increased and multiplied, and became more destructive than before. This terrible obstinacy and depravity was deemed due to the malevolent hatred of Satan, who is, at certain times and periods, permitted to annoy and torment the sons of men.

Sometimes the opponents of the poor insects took an unfair advantage of them, and would not give them a chance of making themselves heard in Court. St. Bernard was preaching one day, when a number of flies entered the church, and disturbed the auditors by their buzzing. The saint excommunicated them, and the next day all the flies were found dead, covering the pavement with their bodies.

CORRESPONDENCE.

CAPTURES.—*Dear Sir*,—It may be a matter of interest to record the abundance of large silk worms this season in the neighborhood of London, Ont. Since the fall of the leaves the cocoons have easily been detected, and my friend, Mr. B. Bayly, and I have made the following captures with very little trouble, and in a very circumscribed district: Telea Polyphemus, 44; Attacus Cecropia, 51; Hyperchiria Io., 20.

LAWRENCE BAYNES REED.

FORMICA SANGUINEÆ.—Latr.

BY FREDERICK CLARKSON, NEW YORK CITY.

In a piece of uncultivated land, bordering a wood in proximity to Oak Hill, Columbia Co., New York, there are two large nests of these ants. They are in size about 4 x 2 feet, and during the eight summers of my residence at this place they have not outwardly increased much in size. The gardener has observed them for thirty-five years, and it is not improbable that they have existed for a half a century or more. I had a longing desire to open them and explore their deep caverns and winding galleries, but the gardener regarded such action as an ill-omen to the place, and an infringement upon the rights of communities that he had long protected and cared for. On one occasion I captured a dozen workers from one of these nests and carried them away about a thousand feet. I then threw them out of the glass jar in which I had captured them upon a carriage way, and, standing the jar down, watched to see what course they might take to the nest. To my astonishment every individual, after much wandering, entered the jar. I repeated the experiment; several re-entered the jar, the others travelled away in different directions and became lost in the grass bordering the road. The ants are social and live in communities, and I take it that they returned to the jar as being the last place in which they were in company.

DEATH OF DR. JOHN L. LECONTE.

It is with feelings of the deepest regret that we announce the death of Dr. J. L. Leconte, the eminent coleopterist, who died on the 15th of November, in the 59th year of his age. His valuable and voluminous writings have given him a world-wide reputation, while his uniform kindness and self-denying labors, in aiding students in his department, have won him the esteem of all who have had the pleasure either of meeting him personally, or of corresponding with him. The writer well remembers the kind encouragement which our departed friend gave him some twenty years

ago by the prompt manner in which he responded to a number of enquiries, and his readiness in undertaking the work of naming a large number of species of Coleoptera. Dr. Leconte ever manifested a warm interest in the Entomological Society of Ontario, and in the earlier volumes of our Journal are many valuable articles from his pen. His Classification of the Coleoptera of North America, published by the Smithsonian Institute in 1861, was a great boon to those interested in the study of American beetles, and greatly stimulated progress in this department, while the many excellent monographs he has written of special families have been invaluable to students.

During the period of the war his scientific labors were interrupted by pressing official duties. He was first appointed Surgeon of Volunteers, and shortly afterwards Medical Inspector, with the rank of Lieutenant-Colonel, which position he occupied for some years. Subsequently he spent three years in Europe, where he visited all the public museums and as many private ones as were accessible to him, which enabled him, with the aid of a wonderful memory, to settle many doubtful points in reference to species in his own cabinet. On his return he resumed his entomological work, which was carried on with but slight interruption until within a week or two of his death. His labors on the Rhyncophora resulted in the publication of a volume of 455 pages, entitled, "Species of Rhyncophora," in which he was assisted by Dr. Horn. This was published as a separate volume by the American Philosophical Society in 1876. Subsequently, in association with Dr. Geo. H. Horn, he prepared an entirely new work to replace his early volume on the Classification of Coleoptera of North America, in which the bulk of the families are re-arranged and a vast amount of material, which has accumulated during the past twenty years, utilized, and the whole brought into harmony with the present advanced condition of knowledge on this subject. This work, which was issued during the early part of the present year by the Smithsonian Institute, will prove a most valuable guide to students' of Coleoptera everywhere, and will, perhaps, be the most enduring monument of his life work. No man who has ever lived has done as much as Dr. Leconte to advance the study of Coleoptera in America; and it has been well said that to follow the papers he has written during his busy life would be to give a history of the progress of scientific Coleopterology in America. His death will be a very great loss to American science, and an almost irreparable one to the special department in which he labored.

BOOK NOTICES.

First Annual Report of the Injurious and other Insects of the State of New York; by J. A. Lintner, State Entomologist; large 8vo.

This very complete and methodical report, by Prof. Lintner, occupies 382 pages, and is illustrated with 84 cuts. The volume opens with a copious table of contents, followed by a chapter on the importance of the study of Entomology, in view of the extent of insect depredations, and the immense losses insects occasion. The progress which has been made in Economic Entomology is then reviewed, and the writings of the chief workers in this field referred to, following which the various insect remedies and the best methods of using them are fully detailed. Preventives of insect depredations are next noticed, including the use of odorous substances to deter insects from depositing their eggs on plants and trees, as well as various mechanical contrivances employed for the same purpose.

Among injurious insects, those belonging to the order Lepidoptera are first taken up. They are:—The bag or basket worm, *Thyridopteryx ephemeræformis;* the larch lappet, *Tolype laricis;* the bronze-colored cut worm, *Nephelodes violans;* the stalk-borer, *Gortyna nitela;* he corn-worm, *Heliothis armiger;* the vagabond crambus, *Crambus vulgivagellus;* the dried crambus, *Crambus exsiccatus;* the peach-twig moth, *Anarsia lineatella;* the apple-leaf Bucculatrix, *Bucculatrix pomifoliella;* and the apple-tree case-bearer, *Coleophora malivorella.* The insects belonging to the Dipterous order are next noticed, beginning with some species of Anthomyiidæ, next the Syrphidæ, Drosophilidæ, concluding with the wheat-stem maggot, *Meromyza Amerieana.* Those coleopterous insects which are injurious are then treated of in the following order: The rose-beetle, *Macrodactylus subspinosus;* the Indian Cetonia, *Euphoria Inda;* the sparagus beetle, *Crioceris asparagi;* the punctured clover-leaf weevil, *Phytonomus punctatus;* and the sculptured corn-curculio, *Sphenphorus sculptilis.*

Injurious insects belonging to the order Hemiptera next claim attention, when the life histories of the harlequin cabbage-bug, *Murantia histrionica;* the four-lined leaf-bug, *Pœcilocapsus lineatus,* and the two-marked tree-hopper, *Enchenopa binotata,* are given. Throughout the whole of this valuable report the species referred to are freely illustrated with excellent figures, and the text conveniently arranged in separate paragraphs with suitable headings.

The report closes with an Appendix, which contains a full account of

the entomological writings of the late Dr. Asa Fitch, a list of the insect enemies of the apple-tree, descriptions and notes of Lepidoptera, on the life duration of the moths, followed by a very complete general index covering 33 pages, with an additional index to food plants. We have had many excellent reports from State Entomologists in the past, but we doubt if ever there was a report published containing so much useful information and so well arranged in every respect as this first report of Prof. Lintner's. The State of New York may well be congratulated in having secured the services of an officer so efficient and painstaking.

Twelfth Report of the State Entomologist on the Noxious and Beneficial Insects of the State of Illinois.

This twelfth Illinois report is the first of the recently appointed State Entomologist, Prof. S. A. Forbes. It is a large octavo pamphlet of 162 pages, illustrated with 30 cuts. An exhaustive account is given of the corn-root worm, *Diabrotica longicornis*, Say, with magnified figures of the insect in all its stages, together with details of the injury it has inflicted. This is followed with an account of the remedies, both natural and artificial, which have been found useful in subduing this pest. The Chinch bug, *Blissus leucopterus*, is next noticed, its life history given, and natural enemies enumerated, including a species of bacterium, *Micrococcus insectorum*, which has been found destructive to the Chinch bug in the west.

The strawberry crown borer, *Tyloderma fragaria*, is described very fully, and its work illustrated; also the crown miner, *Anarsia lineatella*. Following these are descriptions of the melon plant louse, *Aphis cucumeris*, n. sp., which has been found injuring cucumbers and melons; the European cabbage worm, *Pieris rapæ*, with details of experiments with various remedies. The cherry or pear slug, *Selandria cerasi;* the white-marked tussock caterpillar, *Orgyia leucostigma*, the bag-worm, *Thyridopteryx ephemeræformis;* the army worm, *Leucania unipuncta;* the stalk-borer, *Gortyna nitela;* and the zebra caterpillar, *Mamestra picta*, are also described, following which is an interesting article on the food relations of predaceous beetles, a subject to which Prof. Forbes has devoted much attention. Next in order is a paper on the Phytopti and other injurious plant mites, by H. Garman, and observations on the angoumois grain moth and its parasites, by F. M. Webster; the whole forming an excellent report, one which well sustains the character to which the Illinois reports have attained.